

CLAIMS

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1. An outer rotor type motor / generator housed in an annular space defined between an engine side wall and a crank pulley fixed to an end of a crankshaft, said motor / generator comprising:

a stator supported on the engine side wall; and

a rotor supported on an inner face of a peripheral wall of the crank pulley so as to face an outer periphery of the stator across an air gap,

wherein an air inlet passage is formed between the engine side wall and the edge of the peripheral wall of the crank pulley so as to provide communication between the annular space and the outside of the crank pulley,

wherein cooling fan blades are provided on a side wall of the crank pulley and extend radially outwards from one end of the crankshaft to the peripheral wall of the crank pulley, and

wherein coils of the stator are cooled by air introduced into the annular space via the air inlet passage and the air is discharged to the outside by means of the cooling fan blades.

2. An outer rotor type motor / generator according to Claim 1,

wherein the stator comprises a plurality of cores and coils, the cores being positioned radially and each of the cores having a coil wound around it, the radial outer ends of each of the cores projecting in the circumferential direction so as to be close to each other and forming air passages between adjacent coils, air circulating through the air passages.

3. An outer rotor type motor / generator according to either Claim 1 or Claim 2,

wherein a shield for covering the entrance to the air gap is formed on an end face of the stator facing the air inlet passage.

4. An outer rotor type motor / generator according to either Claim 1 or Claim 2,

wherein a large number of projections or channels inclined towards the circumferential direction are formed on the outer periphery of the stator facing the entrance and the exit of the air gap so that the air flows generated by these projections or channels prevent air from entering the air gap.

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